
INTERNATIONAL STANDARD



913

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Sulphuric acid and oleum for industrial use – Determination of ash – Gravimetric method

Acide sulfurique et oléums à usage industriel – Dosage du résidu fixe calciné – Méthode gravimétrique

First edition – 1977-11-15

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 913:1977

<https://standards.iteh.ai/catalog/standards/sist/68048a8d-496c-454c-b6a3-851e86cdc17a/iso-913-1977>

UDC 661.25 : 543.714

Ref. No. ISO 913-1977 (E)

Descriptors : sulphuric acid, chemical analysis, determination of content, residues, gravimetric analysis.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 47, *Chemistry*, has reviewed ISO Recommendation R 913-1968 and found it technically suitable for transformation. International Standard ISO 913 therefore replaces ISO Recommendation R 913-1968, to which it is technically identical.

ISO Recommendation R 913 had been approved by the member bodies of the following countries :

Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Ireland	Switzerland
Chile	Italy	Thailand
Cuba	Japan	Turkey
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	New Zealand	U.S.S.R.
France	Poland	Yugoslavia
Germany	Portugal	
Hungary	Romania	

No member body had expressed disapproval of the Recommendation.

No member body disapproved the transformation of the Recommendation into an International Standard.

Sulphuric acid and oleum for industrial use – Determination of ash – Gravimetric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a gravimetric method for the determination of ash of sulphuric acid and oleum for industrial use.

2 PRINCIPLE

Evaporation of a test portion, followed by ignition at 800 ± 50 °C and weighing.

3 APPARATUS

Ordinary laboratory apparatus and

3.1 Platinum dish, of capacity approximately 100 ml, flat-bottomed.

3.2 Electric furnace, capable of being controlled at 800 ± 50 °C.

4 PROCEDURE

4.1 Test portion

In the platinum dish (3.1), previously ignited at 800 ± 50 °C, cooled in a desiccator and weighed to the nearest 0,000 1 g, weigh, to the nearest 0,01 g, approximately 50 g of the test sample.

4.2 Determination

Evaporate the test portion (4.1) by carefully heating the dish containing the test portion (on a sand bath, for example). Heat to dryness.

Place the dish containing the residue in the electric furnace (3.2), controlled at 800 ± 50 °C, and keep at this temperature for about 15 min.

Remove the dish from the furnace, place in a desiccator and, after cooling to ambient temperature, weigh to the nearest 0,000 1 g.

5 EXPRESSION OF RESULTS

The ash is given, as a percentage by mass, by the formula

$$\frac{m_1 \times 100}{m_0}$$

where

m_0 is the mass, in grams, of the test portion (4.1);

m_1 is the mass, in grams, of the residue weighed.

6 TEST REPORT

The test report shall include the following particulars :

- the reference of the method used;
- the results and the method of expression used;
- any unusual features noted during the determination;
- any operation not included in this International Standard, or regarded as optional.

ANNEX

ISO PUBLICATIONS RELATING TO SULPHURIC ACID AND OLEUM FOR INDUSTRIAL USE

ISO 910 – Determination of total acidity, and calculation of free sulphur trioxide content of oleum – Titrimetric method.

ISO 911 – Evaluation of sulphuric acid concentration by measurement of density.*

ISO 912 – Determination of sulphur dioxide content – Barium sulphate gravimetric method.

ISO 913 – Determination of ash – Gravimetric method.

ISO 914 – Determination of total nitrogen content – Titrimetric method after distillation.

ISO/R 915 – Determination of iron content – 2,2'-Bipyridyl spectrophotometric method.

ISO 2363 – Determination of oxides of nitrogen – 2,4-Xylenol spectrophotometric method.

ISO 2717 – Determination of lead content – Dithizone photometric method.

ISO 2877 – Determination of chlorides content – Potentiometric method.*

ISO 2899 – Determination of ammoniacal nitrogen content – Spectrophotometric method.

ISO 3423 – Determination of sulphur dioxide content – Iodometric method.

ISO 5792 – Determination of arsenic content – Silver diethyldithiocarbamate photometric method.*

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* Applicable only to sulphuric acid.